



# Countdown to EUROCORR 2024 in Paris begins

The EUROCORR 2024 hotel reservation platform has been released ahead of the event in Paris from 1 to 5 September



Located within walking distance from the Avenue des Champs-Élysées, next year's EUROCORR in Paris not only promises to be an exciting destination, but a conference filled with a wide range of sessions and workshops

The organisation for [EUROCORR 2024](#) is well underway with only a few months left for the opening of the biggest corrosion conference on the continent. CEFACOR, along with Chimie ParisTech, SFV, and DECHEMA have been very busy making sure participants will be able to enjoy not only the conference and exhibition, but also the best that Paris has to offer. More than 1,000 participants are expected to attend, visiting from over 50 countries.

This will be a great opportunity for everyone in the corrosion community to establish a global network and exchange details of their latest findings.

The theme of EUROCORR 2024 will be *A step forward in societal awareness of material degradation issues*. EUROCORR 2024 will cover all areas of corrosion and corrosion protection, including new hot topics like materials for green and renewable energies, challenges of hydrogen energy systems, and materials issues related to zero net emissions.

EUROCORR is key to creating links between academia and industry, bridging the gap between science and technology, going from fundamental research on corrosion mechanisms to knowledge transfer for applications to innovative technologies.

## CONFERENCE VENUE

The congress will be held in the heart of Paris, France, at [Palais des Congrès](#), situated in a strategic location within the city centre. It is a 10 minute walk from the Avenue des Champs-Élysées and the Arc de Triomphe, and directly accessible from the Metro Line 1.

## ACCOMMODATION

The EUROCORR 2024 hotel reservation platform is available by [clicking here](#), where you will find that hotel rates have been negotiated with several hotels, and more will be made available during the coming weeks.

The best options for young researchers is to share a twin room with a colleague, with options starting at less than €100 per night, per person. If you have any questions or need help deciding which accommodation option is best suited to you, then please contact Voyages C. Mathez ([eurocorr2024@matheztravel.com](mailto:eurocorr2024@matheztravel.com)), or by phone: +33 (0)4 93 82 68 82.

## SPONSORING AND EXHIBITION

There are only a few booths remaining for exhibitors at EUROCORR 2024, so please contact Gweltaz Hirel from the SFV ([gweltaz.hirel@vide.org](mailto:gweltaz.hirel@vide.org)) if you would like to exhibit at the event.

If your institution would like to become a sponsor, then please send a message to [eurocorr2024@cefracor.org](mailto:eurocorr2024@cefracor.org) to find a solution tailored to your wishes.

## CONGRESS DINNER

The Conference Dinner will take place on Wednesday 4th September at [La Maison de la Chimie](#), located on 28 rue Saint Dominique, 75007 Paris where the world-renowned Maison Lenôtre will be catering for this highly anticipated event. Attendance to the Conference Dinner is not included in the registration fee.

## MEET THE PLENARY SPEAKERS

### → PROF. JOHN SCULLY

University of Virginia,  
Charlottesville,  
VA, USA

Title: Exploring corrosion and passivation in multi-principal element alloys



### → PROF. NICK BIRBILIS

Deakin University,  
Geelong, VIC,  
Australia

Title: An overview of corrosion of additively manufactured alloys



### → PROF. ARJAN MOL Technical University Delft, Netherlands

Title: Machine learning assisted performance optimization of corrosion inhibitors and active protective coatings



### → PROF. XIAOGANG LI University of Science and Technology, Beijing, China

Title: Corrosion big data for the design of application of low-alloy steels



**EUROCORR** Paris 2024  
EUROPEAN CORROSION CONGRESS

1 - 5 September 2024



Organised by

EFC

CEFRACOR

ParisTech

DECHEMA

CNRS

SFV

## SPECIAL WORKSHOPS

- Corrosion and corrosion protection of additive manufactured metals
- Design and performance of corrosion resistant high entropy alloys and multi-element alloys
- Durability issues in photovoltaic modules and solar energy systems (special session under WP26)
- Corrosion management applications in Industry

## WORKING PARTY/TASK FORCE SESSIONS

- Corrosion and scale inhibition
- Corrosion by hot gases and combustion products
- Nuclear corrosion
- Environment sensitive fracture
- Corrosion mechanisms, methods and modelling
- Corrosion education
- Marine corrosion
- Microbial corrosion
- Corrosion of steel in concrete
- Corrosion in oil and gas production

- Coatings
- Corrosion in the refining and petrochemical industries
- Cathodic protection
- Automotive corrosion
- Tribo-corrosion
- Polymers and advanced materials
- Corrosion and corrosion protection of drinking water systems
- Corrosion of archaeological and historical artefacts
- Corrosion control in aerospace
- Corrosion reliability of electronics
- CO<sub>2</sub>-corrosion in industrial applications
- Atmospheric corrosion
- Corrosion in green and low carbon energy technologies
- Corrosion of medical implants and devices

## IMPORTANT DATES

Late abstracts for poster – short oral presentations open from **Tuesday 2 April to Saturday 25 May 2024**, or until capacity is reached.

Early-bird Registration Deadline: **Saturday 15 June 2024**

# Full rostrum of joint sessions for EUROCORR 2024

Stay up to date with all the latest Working Party and Task Force Joint Sessions scheduled to take place in Paris this year

## JOINT SESSIONS

- Hydrogen challenges in energy and transport systems (WP5, WP6, WP17, WP22, WP25, TF, WCO)
- Corrosion sensing, monitoring and prediction (WP6, WP8, WP25)
- Cathodic protection in marine environment (WP9, WP16)
- Cathodic protection of steel in concrete (WP11, WP16)
- CO2 reduction measures (WP24, WP26)
- Corrosion issues of electric vehicles and e-mobility systems (WP17, WP23, TF)
- Multi-scale modelling for design of protective coatings (WP6, WP8, WP14, WP17, WP22, WP25, VIPCOAT)
- Corrosion in molten salts and ionic liquids for energy applications (WP3, WP4, TF)

## CONGRESS SECRETARIAT

CEFRACOR, 28 rue Saint Dominique, 75007 Paris, FRANCE  
eurocorr2024@cefracor.org

## CONTACT EXHIBITION

SFV - Gweltaz Hirel :  
gweltaz.hirel@vide.org

CONGRESS WEBSITE [eurocorr2024.org](https://eurocorr2024.org)



## CONTINUED FROM PAGE 1

...recognising it as a fully relevant, if not even principal concern of decision making is only increasing. We corrosionists welcome this trend, as corrosion protection and sustainability goals are intrinsically aligned.

### → **Durability, even in harsh environments.**

Sustainable development aims to meet the needs of the present without compromising the ability of future generations to meet their own needs. Corrosion protection ensures the long-term durability of infrastructure, buildings, and other critical assets essential for future generations.

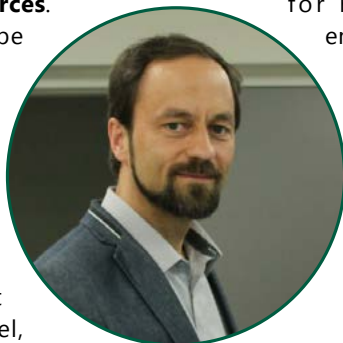
### → **Conservation of natural resources.**

As corroded structures need to be replaced, new raw metal extraction is required with a variety of negative impacts on the environment. In addition, the whole production chain of new materials requires energy.

### → **Pollution reduction.**

Corrosion products are not necessarily harmful. Copper, nickel, and other metals oxidise to species that can contaminate soil, water, and air, posing risks to ecosystems and human health.

→ **Reduction of waste.** Unfortunately, not all degraded metal structures and objects are recycled. The premature disposal of the materials then



contributes to waste generation and landfill accumulation.

Surely, our goal must be to protect metal structures optimally, not indefinitely. Smart corrosion management considers the expected lifetime of the structure (we don't need to keep a car exhaust system intact for a century) and all kinds of associated costs. These aspects are covered by the principles of Total Cost of Ownership (TCO) and Lifecycle Cost Analysis (LCA), which find their way into the corrosion protection mainstream.

The first principle teaches us that it may be better to invest in more expensive solutions, rather than paying for regular repairs. The other weighs all environmental costs, whether they are incurred during mining, manufacture, transport, use, or end of life.

We need to consider corrosion in early stages of product development, utilising tools based on both mechanistical understanding and historical experience to support developers unfamiliar to principles of corrosion.

When fully integrated into decision-making processes, these approaches have great potential to reduce the cost of corrosion that every member of our society bears. And indeed, a lot of fascinating work for our community.

Yours, Tomáš Prošek

# EFC welcome five new Working Party Chairs

For five Working Parties it's the beginning of a new era and in their own words they outline their vision for the future



## In the words of Johan Tidblad

Together with Tomáš Prošek I started the **Working Party 25** on Atmospheric Corrosion, and after his initial term ended it was the natural decision for me to take over the position as Chair of the Working Party.

During my three years as Chair of WP 25 I would like to, among other things, expand participation in the EUROCORR session. I hope that my background

working at RISE Research Institutes of Sweden can help to provide a basis for creating sessions that have both academic and industrial relevance.

And, when it comes to particular subjects that interest me, I take a keen interest in atmospheric corrosion of cultural heritage and atmospheric corrosion modelling.

## GETTING TO KNOW THE NEW CHAIR OF [WORKING PARTY 25](#)...

### Johan Tidblad

Based in Stockholm County, Sweden, Johan be assisted by WP 25 Vice-Chair Tomáš Prošek and will this year celebrate 30 years working at RISE

### CV

#### RISE Research Institutes of Sweden

→ Manager, Automotive Corrosion and Surface Protection  
2014 – Present

→ Researcher  
1994 – 2014

## In the words of Manel Rodriguez Ripoll...

I have been involved in applied research in tribocorrosion for over a decade, but besides my experience, the biggest selling point of **Working Party 18** is the strong team, starting with my co-Chair Prof. Anna Igual Muñoz, and all the colleagues from academy and industry involved in the Board that actively support my activities.

For my time as Chair, we have committed ourselves to three fundamental pillars. The first is to continue the promotion of training and education by offering tailored courses to students and professionals. Secondly, dissemination, which will serve to increase awareness of tribocorrosion as a material transformation caused by a tribological contact in chemically reactive environments, and thirdly is a focus on standardisation by developing a code of practice to develop a standard for tribocorrosion testing.

I work at AC2T research GmbH, the Austrian Competence

Centre for Tribology, a non-profit private R&D service provider. My job relies on applying knowledge gained in fundamental research to company partners, bridging the gap between academia and industry. The WP works in a similar way as it serves as tool for bringing together specialists from both worlds in order to accelerate innovation by speeding up the upscaling from fundamental scientific understanding to technological innovations.

Together with Anna Igual Muñoz, our goal is to extend the activities of the WP beyond the classic topics of tribocorrosion to address the questions we believe will arise due to new technological challenges, such as the wear of machine elements sliding under hydrogen atmosphere, or the new challenges of tribocorrosion that are posed by environmentally friendly water-based lubricants, to name a few examples.



## GETTING TO KNOW THE NEW CHAIR OF [WORKING PARTY 18](#)...

### Manel Rodriguez Ripoll

Based in Austria, Manel is Area Manager "Wear Reduction Strategies" at AC2T research GmbH and will be assisted by WP 18 co-Chair Prof. Anna Igual Muñoz

### CV

→ Area Manager  
**AC2T research GmbH**  
April 2011 – Present

→ Experienced Researcher  
**University of Ljubljana**  
August 2008 – December 2010

→ Research Assistant  
**Fraunhofer Institute for Mechanics of Materials IWM**  
August 2004 – July 2008



### In the words of Philipp Schempp...

I believe that everybody has certain strengths and areas of special expertise and knowledge. I have experience in science (five years as a scientist at BAM, Berlin and now at TH Köln) and industry (10 years in refining), and I think that this can help to understand and bring together different points of view, beliefs, and the needs of people from both 'worlds'. I think, together with Gino de Landtsheer, our Vice-Chair from Borealis, who has decades of relevant industry experience, we will be a good fit for **Working Party 15**.

Gino and I would like to strengthen the exchange of knowledge, innovative ideas, and latest technologies between industry and science. We will proactively push contributions by companies that build and operate (petro)chemical and recycling assets, where corrosion takes place. Also, we'd like to increase the WP's co-operation between science and application by promoting R&D projects. We will have meetings with scheduled presentations, but with enough time for unconventional and easy exchange of information between all stakeholders. Furthermore, we'd like to strengthen the personal relations between the WP members through social events or interactive forums. Another focus area will be the creation of new EFC guidelines on corrosion

in biorefining, to name one example, possibly in cooperation with other affected EFC Working Parties.

During my career, I have gained industry experience at Shell that's relevant to WP 15, i.e. materials & corrosion and integrity management of chemical assets. I think I understand how busy the daily job is for corrosion engineers when the management is asking to cut costs, while safety needs to remain a top priority. We'd like to support engineers by exchanging knowledge on best practices and tools that facilitate their daily job. Gino is a Technical Authority within Borealis for piping, valves, coatings and insulation topics. This requires his involvement in many corrosion related investigations, to keep the assets running.

As for me, I am married to Io, my Mexican wife, we are having two wonderful sons, and I love mountaineering. My personal motto is the concept of "psychological safety," which is when the exchange of ideas is best, if people trust each other. And the pre-condition for such trust is to encourage people to openly say what they think. So, I think "stupid questions"

don't exist, but perhaps some stupid ways to limit people from being free to say what comes into their mind. Psychologically safe teams are proven to belong to the most innovative ones.



### ...AND INTRODUCING THE NEW CHAIR OF **WORKING PARTY 13**...

#### George Winning

Based in Egham, England, George is a corrosion consultant, who is an active member of the corrosion community as a Fellow of the Institute of Corrosion and a Member of AMPP

#### CV

→ Director

**Corrosion and Chemical Consulting Limited**  
October 2022 – Present

→ Technical Manager – Africa  
**Clariant**  
June 2017 – October 2022

→ Global Corrosion Specialist  
**Element Materials Technology**  
September 2015 - June 2017

→ Lead Materials Corrosion Engineer  
**Premier Oil**  
May 2014 – August 2015

→ Business Manager  
**Wood Group Integrity Management**  
January 2009 – May 2014

→ Principle Engineer  
**CAPCIS**  
Jan 2008 – Dec 2008



### ...AND INTRODUCING THE NEW CHAIR OF **WORKING PARTY 26**...

#### Marc Wilms

Based in Amsterdam, Marc Wilms is a Principal Materials & Corrosion Engineer working at Shell's Technology Centre

Marc supports upstream assets, and new projects, as well as the development of new technology. His research activities include oil and gas production, although his main focus is on New Energy technologies.



# Working Party 10 award addresses next gen challenge

**A new WP 10 award for young researchers asks whether next generation sequencing methods properly address microbial corrosion challenges**

A new Working Party 10 award for young researchers will focus on whether next generation sequencing methods properly address the challenges of microbial corrosion.

The new initiative from the Working Party on Microbial Corrosion focuses on specific microbial corrosion cases and an award for young corrosionists has been launched in the EFC HUB platform.

More information about the project titled **discovering microbial fingerprint of corrosion** can be found on the [EFC WP 10 homepage](#), or

alternatively head over to the [EFC HUB](#), projects section (prior to registration).

## PARISIAN FINGERPRINT

The microbial fingerprint of corrosion cases put forward by young researchers on the platform will be discussed in the Microbial Corrosion session at EUROCORR 2024 in Paris.

The most relevant contribution in feeding the project will be rewarded with a free entry to EUROCORR (only for young corrosionists). The deadline for participation on this project is **Wednesday 15 May**.



WP 10 Chair,  
Pierangela Cristiani,  
RSE - Ricerca sul  
Sistema Energetico  
S.p.A

CLICK THE  
ADVERT

Advertisement



## The New Wave of Corrosion Monitoring

**Acuity reduces material selection time and costly asset downtime.**

Acuity offers unparalleled insight into corrosivity data, enabling engineers to quickly select materials for corrosion resistant products. Acuity's continuous corrosion monitoring reduces downtime, keeping your assets running and your operations efficient. Acuity's cutting-edge technology provides real-time, quantified corrosion data, saving time and resources.



Learn more at [acuitycorrosion.com/efc/](https://acuitycorrosion.com/efc/)

# WP 4 host seminar to mark Corrosion Awareness Day

The fifth online seminar on Nuclear Corrosion this year focuses on corrosion in nuclear waste disposal systems



**On the occasion of the CORROSION AWARENESS DAY 2024 the EFC Working Party 4 will hold its 5<sup>th</sup> online seminar on nuclear corrosion:**

**Is copper a safe canister material for long-term storage of nuclear waste?**  
SIMS- and TEM-based high-resolution studies of internal corrosion of copper exposed to synthetic groundwater

Prof. Christofer Leygraf (em.)  
*KTH Royal Institute of Technology, Stockholm, Sweden*

To mark Corrosion Awareness Day 2024, the EFC Working Party 4 on Nuclear Corrosion will hold its fifth edition of the online seminar on nuclear corrosion on Thursday 25 April from 14:00 to 15:30 (CEST/UTC+2).

This year the topic is corrosion in nuclear waste disposal systems and Professor Christofer Leygraf (pictured below) will explain potential implications on internal corrosion processes, including S-induced stress corrosion cracking and H-induced embrittlement of copper canisters.

According to the nuclear waste disposal strategy in Sweden and Finland, copper is identified as the candidate material for constructing canisters during the long-term storage of nuclear waste. Several years ago, a study was initiated wherein copper was subjected to simulated groundwater conditions at both room temperature and 60 °C.

The penetration of corrosive species, encompassing S, O and Cl was examined using ToF-SIMS, Nano-SIMS and TEM. The penetration is much faster at 60 °C than at room temperature. O is observed along the grain boundaries, while S and H mainly exists within confined areas of the copper matrix. The study seeks to clarify potential implications on internal corrosion



processes, including S-induced stress corrosion cracking and H-induced embrittlement of the copper canister.

The ensuing discussion will delve into ramifications for considering copper as a canister material for the long-term storage of nuclear waste.

Co-authors: Xiaoqi Yue & Jinshan Pan, KTH Royal Institute of Technology, Stockholm, Sweden; Per Malmberg & Elias Ranjbari, Chalmers University of Technology, Gothenburg, Sweden; Vilma Ratia-Hanby & Elina Huttunen-Saarivirta, VTT, Espoo, Finland.

Register your attendance, free of charge, simply by [clicking here](#).

## WP 4 AT EUROCORR 2024

A record number of 60 abstract have been submitted for the Nuclear Corrosion session during this year's EUROCORR in Paris.

Together with the 15 nuclear corrosion-related abstracts for the joint session titled **Corrosion in molten salts and ionic liquids for energy applications** there will be an interesting choice of nuclear corrosion sessions throughout the whole duration of the conference, from Monday to Thursday.

In addition, the WP 4 fall business meeting is scheduled to take place on Wednesday 4 September at EUROCORR 2024, so be sure to

make a note in your diary.

[Click here](#) to find out more about Working Party 4.



# Full agenda at Working Party 15 spring meeting

The Working Party on Corrosion in the Refining and Petrochemical Industries held their annual spring meeting in Genova, Italy



This year's Working Party 15 Spring Meeting took in a range of sessions related to corrosion in the refining and petrochemical industries, as well as a tour of beautiful Genova

Hosted by l'Istituto Italiano della Saldatura (the Italian Institute of Welding IIS), the Spring Meeting 2024 of the EFC Working Party 15 on Corrosion in the Refining and Petrochemical Industries was held in Genova, Italy on Thursday 11 April. A full day began with an introduction to the IIS by Marco De Marco and a brief welcome by chairmen, Philipp Schempp and Gino De Landsheer. The opening session consisted of six technical presentations on corrosion protection, corrosion-resistant alloys and coatings, and (predictive) risk and integrity management of existing assets.

An interesting tour through the IIS materials and welding labs followed lunch, generating many questions by those in attendance. The afternoon session started with farewells for

François Ropital and Johan van Roij, who successfully led the WP for many years. Philipp and Gino provided information on EFC, the Working Party, and coming meetings, followed by an update on the EFC guidelines 46, 55, and 72. Three further presentations on corrosion during plastic recycling, AI-assisted corrosion prediction, and liquation cracking followed.

Marco De Marco from IIS hosted a productive meeting in a professional environment that allowed participation of around 20 (f2f) and 30 (online) colleagues. This included a walking tour through Genova's beautiful city centre and dinner, which allowed guests to get to know each other. The Spring Meeting 2025 will kindly be hosted by Linde Engineering in Munich, Germany. [Click here](#) to find out more about Working Party 15.

CLICK THE  
ADVERT

Advertisement



## A new generation of sustainable, environmentally friendly products for corrosion protection!

Cortec® Corporation, a world leader in green corrosion prevention technologies, presents EcoLine® products based on renewable resources. EcoLine® products are safer for the environment and leave behind a high-performance Vapor phase Corrosion Inhibitor (VpCI®) layer. VpCI's are revolutionary technology that simplifies corrosion protection. VpCI's are effective at protecting multi-metals in electrical, static, rotating, and civil equipment and structures. This technology is designed to save time, money, and offer more thorough, reliable, and easier-to-use protection than a variety of other metals preservation strategies. EcoLine® products exemplify Cortec's long-standing commitment to conserve our natural resources while providing powerful corrosion protection.

# EFC announce they have joined the international community

## Approval for an EFC international branch has passed paving the way for new faces to join the Federation

In response to requests from international EUROCORR delegates wishing to become more involved in the activities of the Federation, the creation of an EFC International Branch was approved at the last General Assembly in November 2023. The new structure will allow people who live and operate in countries where the EFC is not represented through its European or International Member Societies to become an EFC member through this Branch.

Benefits will include participation in EFC Working Parties, reduced registration fees for EFC events, if applicable, access to the restricted area of the EFC website containing the electronic proceedings of past EUROCORR conferences, and discounted prices for EFC publications, such as the EFC Green Books. For more information and to find out if you're eligible to join the EFC community, contact EFC COO, Pascal Collet (coo@efcweb.org)

---

## EFC Events continue to offer greater visibility for Society and Affiliate Members

All the EFC Society Members and Affiliate Members can share information about the events they organise or support to provide even more visibility.

It's a simple process. All Member need to do is to inform Ines Honndorf at the Frankfurt office of the Federation (ines.honndorf@dechema.de) and provide general information, such as the name of the event, the date, and location, along with a link to the event and it will be [listed on the dedicated EFC webpage](#).

Offering greater visibility to the listed events, all the EFC Society Members, Affiliate Members, and also the EFC

Working Parties and Task Forces, have the opportunity to make it an EFC event. It's free of charge and as simple as the submission of an [application form](#) (roman.bender@dechema.de). In return, the event organisers will receive an EFC event number and marked as such to identify it on the EFC website.

The event will also be promoted prominently on EFC's main page and the [events page](#) of the website.

In parallel, your EFC event will be promoted regularly in the [EFC Newsletter](#), as well as across social media to raise the audience and attract participants.

---

## Scientific excellence and technical knowledge at the heart of EFC Approved Courses

Corrosion education is part of the key EFC missions, so the EFC Approved Courses were introduced to disseminate scientific excellence and technical knowledge. Education and training of corrosion protection professionals and technical public is recognised to help reduce the societal costs of corrosion. The EFC supports its Member Societies active in corrosion education by granting the EFC Approved Course label to courses with high professional standards in line with the objectives to limit the detrimental impacts of corrosion on assets, the environment, and health.

The Approval is granted to courses reviewed in detail and proposed by European Member Societies of the EFC, or European developed courses supported by the European

Member Societies, who are responsible for the course content and delivery. The application of a Member Society involves submission of a questionnaire to the EFC Scientific Secretary Dr. Roman Bender (roman.bender@dechema.de). It will be examined by the EFC Course Endorsement Committee and approved by STAC and the EFC Scientific Secretary. The approval is valid for three years with an approval fee of €500 for the first labelled course of a Member Society and €300 for any further course or course re-examination. The course will be promoted on the EFC Approved Courses page of the website. It will also be promoted in the EFC Newsletter, as well as across social media. [Click here](#) for the list of Approved Courses, and [click here](#) for further details.



# EFC welcomes six new Affiliate Members

Six new organisations have become EFC Affiliate Members and will benefit from international visibility, exhibitor benefits at EUROCORR and the chance to join a network of likeminded corrosionists



**ELSYCA** provide computer-aided engineering for surface finishing, cathodic protection, AC mitigation, corrosion-resistant design and engineering. Thanks to its knowledge and expertise in electrochemistry, Elsyca deliver comprehensive multiphysics digital twin solutions or corrosion analysis and mitigation. [elsyca.com](https://elsyca.com)

A pioneer and provider of eco-friendly coating solutions for metal parts for more than 40 years, **NOF METAL COATINGS EUROPE** offer coating solutions for metal parts inspired by a global vision and supported by teams in Europe, Asia, North and South America. [nofmetalcoatings.com/europe/](https://nofmetalcoatings.com/europe/)



**NOF METAL COATINGS EUROPE**



The **ANTWERP MARITIME ACADEMY** is the only Higher Education Institute in Belgium that provides academic degrees in Nautical Sciences and in Marine Engineering. Research wise, AMA develop various expertise and projects, including marine corrosion and antifouling coatings. [amacademy.be](https://amacademy.be)

**Q-LAB CORPORATION** has been a global provider of material durability testing products since 1956. They design and manufacture standard test substrates, as well as weathering, light stability, and corrosion testers. Their weathering products and services are used by material scientists and technicians in numerous industries including: additives and colorants, adhesive and sealants, automotive, building materials, and renewable energy. [q-lab.com](https://q-lab.com)



**BAC CORROSION CONTROL A/S** is a market leader in Cathodic Protection, by galvanic anodes and impressed current. Based in Denmark and France, they are specialised in the design, field survey and commissioning of corrosion control systems. [bacbera.dk](https://bacbera.dk)

**MONTIPOWER – MONTI-WERKZEUGE GMBH** is known for the Bristle Blaster products that offer a unique surface preparation solution when a blast-quality finish is required. A range of tools are available in different options to comply to the working environment. [montipower.com](https://montipower.com)



# EFC Webinar centred around Corrosion Awareness Day

The collaborative webinar will focus on the corrosion performance of additively manufactured metals



**WEBINAR**  
**CORROSION PERFORMANCE**  
**of AM METALS**  
**May 21, 2024**

A full schedule for the webinar includes three presenters and eight speakers across two sessions discussing corrosion performance of additively manufactured metals

As part of the programme of events proposed around World Corrosion Awareness Day 2024, the EFC has announced details of a webinar focusing on the corrosion performance of additively manufactured metals.

The webinar, sponsored by Elsevier, will be presented by Pascal Collet, EFC COO, along with Iris De Graeve (Vrije Universiteit Brussels) and Reynier Revilla Castillo (VUB group of Electrochemical and Surface Engineering) as moderators, as well as organisers of the successful EUROCORR dedicated corrosion and corrosion protection workshop.

It is scheduled take place on Tuesday 21st May with the presentation of recognised authors from academia, research institutes, and industry, from across Europe and China. The list of names scheduled to speak in the morning session include:

- **Prof. Bower Zhang** - University of Science & Technology, Beijing,
  - **Mrs. Clara Linder** – RISE
  - **Prof. Sergio Lorenzi** – University of Bergamo
  - **Dr. Nicolas Nutal & Mr. Frédéric Novello** – CRM group
- In the afternoon session, the speakers will include:
- **Dr. Ravi Shahani** – Constellium
  - **Prof. Matjaz Godec** – IMT

→ **Mr. Adrien Barroux** – CETIM

→ **Dr. Fanny Barbaud** – CEA

## UP FOR DISCUSSION

The webinar will also discuss the corrosion performance and other technical properties of additively manufactured metals (stainless steel, alloys (Ni, Al, Cu, Ti)) in relation with the application conditions, including the post treatments.

These performances will be put into perspective with requirements as diverse as those in the nuclear, transport, and maritime sectors. This programme, prepared with academia and industry experts has been designed to gather all those involved in the corrosion performance of AM metals in order to provide an opportunity for networking and learning more from each other.

You can register for this free of charge webinar by completing the registration form. [Click here](#) to register for the morning session, or [click here](#) to register for the afternoon session. Alternatively, scan the QR code (below, left) to register for the morning session and scan the larger QR code on the right for the afternoon session.



# YEFC shape the future of corrosion at EUROCORR 2024

From career fairs, to plenary competitions, and inspiring talks, the next generation of corrosionists will be celebrating the future in Paris

## YEFC ANNUAL MEETING AND CAREER FAIR

The 10th annual meeting of the [Young EFC](#) will take place at EUROCORR this year. Our annual meetings have demonstrated strong engagement of young (or young at heart) professionals with an increasing number of participants each year. We are looking forward to discussing the YEFC and its activities to a broad audience.

In addition, this year the get-together will be combined with a career fair. Do you have less than ten years of professional experience in a corrosion-related field (including PhD)? Do you want a new position in academia or industry? Are you hiring in your group or your company? Then join us at the EUROCORR 2024 career fair.



Celebrating women working in corrosion, Yolanda Hedberg (left) from the University of Western Ontario will discuss her path to a career in corrosion science on 27th June and follows Jenifer Locke (above), Fontana Corrosion Center, and her talk on how to achieve a successful career

## YEFC PLENARY LECTURE

A 3M Plenary Lecture Competition for early career researchers was organised to select the YEFC plenary for EUROCORR. After a first screening based on a one minute video, CV and motivation letter, four participants were selected for the second and final round. Emilio Martínez-Pañeda, Associate Professor of Engineering Science at the University of Oxford (UK) was selected as the YEFC plenary by a jury of YEFC board members and seven external jurors, based on a three minute video presentation about his research. His plenary lecture entitled *Towards a Virtual Corrosion Lab: a new generation of mechanistic, multi-physics models for pitting and stress corrosion cracking* will be presented on the morning of Tuesday 3rd September.

## BEST ORAL PRESENTATION AWARDS

Two oral presentation prizes, recognising outstanding communication skills of early career corrosionists, will be awarded at EUROCORR 2024. A pre-selection of (maximum) 10 candidates will be made before EUROCORR, based on a three-minute video. Are you up to the challenge? Then, once oral presentation has been accepted, [register here](#) and send your 3M video to [youngcorrosion@gmail.com](mailto:youngcorrosion@gmail.com) by Sunday 28th July. The awards are donated by [Mankiewicz](#).

### KEY DATES:

**30th April:** registration opens

**28th July:** 3M video due

**19th August:** finalists informed

**5th September:** awardees announced

## WOMEN IN CORROSION (WIC)

This year, Young EFC are happy to celebrate women working in corrosion with the help of two inspiring women, mentors and role models.

Within the frame of the International Day of Women in Science, Jenifer Locke (Fontana Corrosion Center, Ohio State University, USA) gave an inspirational talk about her career and shared tips for a successful career and satisfied life. Did you miss it? You can [listen again here](#).

While, honouring the International Day of Women in Engineering, Yolanda Hedberg (University of Western Ontario, Canada) will discuss her path to an academic career in corrosion science on 27th June. She also leads an international training programme in corrosion and will introduce some of its opportunities. [Register here](#).

## TASK FORCE

The YEFC also joined efforts with EFC EDI Task Force, M.S.C.A. Steminist, Coatings - Open Access Journal and the Alexander von Humboldt Foundation to organise the Women in Science Week, from 5th to 9th February 2024. During the week-long event, seven keynote speakers reflected on diversity and inclusion in STEM-related fields with a focus on corrosion science.



# A busy spring brings exciting new opportunities in advanced scientific writing series

On 20th March, the YEFC hosted the next webinar in the Advanced Scientific Writing series, in partnership with Elsevier. This webinar focused on *How to write a paper? Insights. Classics & Novelties*. Marlene Silva, Elsevier-Publisher Materials Science, as well as the editors of Corrosion Science, Prof. Arjan Mol and Prof. Dawei Zhang, provided useful insights on how to construct and write a research paper, get advice on how to choose a suitable journal, and what editors are looking for in an article. The interactive session at the end of the presentation was particularly well received by the 52 participants.

All previous webinar presentations are available for the Young EFC community upon request. Just send us an email at [youngcorrosion@gmail.com](mailto:youngcorrosion@gmail.com).

## CORMENTOR AND YEFC VIRTUAL WORKSHOP

CREATE CORRECT and Young EFC are proud to present the first 2024 CORmentor Virtual Event. On 18th April, join the YEFC online for an engaging lecture by Janine Mauzeroll (right), titled *The Wonderful World of Electrochemistry for Corrosion*, followed by a breakout room event.

Choose from:

- Good Leadership, hosted by Noémie Ott
- Imposter Syndrome, hosted by Yolanda Hedberg

- Scientific Writing in Corrosion, hosted by Arjan Mol
  - Corrosion Industry Career Opportunities, hosted by Damien Féron
  - Resumes, hosted by Lisa Briona
- To find out more, [click here](#).

## CORROSION AWARENESS DAY

Wednesday 24th April has been designated as Corrosion Awareness Day by the World Corrosion Organization (WCO).

The Young EFC supports and encourages the corrosion community to organise events and activities to mark Corrosion Awareness Day, aimed at raising awareness about the impact of corrosion in our societies and industries.

More than 12 activities have been registered this year and will take place across the world. The full list of activities can be found by [clicking here](#).



## ADVERTISE IN THE EFC NEWSLETTER AND SPREAD YOUR MESSAGE ACROSS EUROPE

The EFC Newsletter is pleased to announce that it is now accepting advertising and welcomes enquiries. If you want to be involved then email the address below

e-mail [COO@EFCWEB.ORG](mailto:COO@EFCWEB.ORG) to find out more

**EFC**  
EUROPEAN FEDERATION OF CORROSION

# The Young EFC help drive a month of global corrosion awareness with dual events

## CORROSION ENGINEERING VS. CORROSION MANAGEMENT

The Young EFC are pleased to invite you to its first YEFC Corrosion Awareness Webinar. On 24th April, Ali Morshed (right) will share his extensive knowledge and practical insights for effective corrosion management strategies, addressing the challenges faced by industrial partners and highlighting potential solutions. To find out more and to register, [click here](#).



## WCO SOCIAL MEDIA ACTION

The YEFC supports the WCO, AMPP and EFC in a campaign of social media posts *Corrosion Around the Clock* to raise corrosion awareness. On Wednesday 24th April, at 8.00am in each time zone, a post related to iconic structures (a suggested general theme) will be released by local member societies or entities to engage the public and others in the importance of corrosion and corrosion prevention.

So, mark 24th April in your calendar, join an activity, and let's work together towards raising awareness about corrosion. The YEFC would like to express a big thank you to all the organisers of Corrosion Awareness Day 2024. Curious about the YEFC and its initiatives? Stay tuned on [LinkedIn](#), the [EFC Hub](#) or contact us at [youngcorrosion@gmail.com](mailto:youngcorrosion@gmail.com).

## MEET THE YEFC BOARD

The YEFC board consists of **Sajjad Akbarzadeh** (UMons, Belgium), **Arthur Boidot** (NOF Metal Coatings Europe SA, France), **Annesha Das** (PSI, Switzerland), **Mirsajjad Mousavi** (Teijin Aramid BV, Netherlands), **Noémie Ott** (OST, Switzerland), **Can Özkan** (Delft University of Technology, Netherlands), **Reynier Revilla** (VUB, Belgium) and **Andressa Trentin** (VTT, Finland).

The YEFC board benefits from the support of EFC board members, **Marta Mohedano** (Universidad Complutense de Madrid, Spain) and **Bartłomiej Guzik** (Mankiewicz Gebr. & Co, Poland).

Arthur Boidot



Annesha Das

Mirsajjad Mousavi



Noémie Ott

Can Özkan



Reynier Revilla

Andressa Trentin



Sajjad Akbarzadeh



# EUROCORR 2023 honoured as ambassador for Brussels

In the iconic Brussels Stock Exchange, the organisers of EUROCORR 2023 are recognised for organising the successful international event



On Tuesday 13 February, VOM, together with UMONS and VUB, were honoured to receive an ambassadorial award for organising the EUROCORR 2023 congress at the Meetings Ambassadors Night in the iconic Brussels Stock Exchange.

The eighth edition of the Brussels Meetings Ambassadors Night honoured 15 organisers who staged international conferences or major meetings in 2023, this honorary programme honours ambassadors to serve as the voice of

Brussels, highlighting the city's unique features, strengths, and benefits to potential attendees and stakeholders.

The honour represents years of successful and fantastic co-operation with a motivated and professional team from VOM, UMONS, VUB, and Materia Nova. Together, the team are proud to be one of the nominees that brought so many international congress attendees together in the Belgian capital around the science of corrosion control.



From left: Veerle Fincken, Herman Terryn, and Marjorie Olivier celebrate the honour and the years of planning that went into EUROCORR 2023 in the historic Brussels Stock Exchange





# IOM3 launch the Sustainable Future Awards 2024

The Sustainable Future Awards 2024 has been established to recognise pioneers in sustainability and the circular economy



The Institute of Materials, Minerals and Mining (IOM3) has announced the launch of the Sustainable Future Awards 2024, dedicated to celebrating and encouraging pioneers in sustainability, equality, diversity, and inclusion (EDI), and the promotion of circular practices in the extraction, processing, and use of natural resources.

The IOM3 Sustainable Future Awards 2024, open to individuals, teams, and organisations globally operating within the materials cycle. These awards aim to provide a platform for knowledge exchange, promoting a sustainable future and showcasing on-the-ground developments in practice. The awards will focus on four categories:

→ **Circular Economy:** Recognising good practices and innovation towards a more circular economy

→ **Sustainable Materials Innovation for Net-zero:** Honouring contributions by materials, minerals, and mining to the transition to a low-carbon, resource-efficient society

→ **Inclusive Practices & Social Responsibility:** Recognising an organisation's commitment to creating a diverse and inclusive culture centered around equality

→ **Sustainable Natural Resource Management:** Celebrating excellence in sustainable resource management, protecting and enhancing biodiversity, water, air, and soil. Acknowledging organisations that protect the planet through responsible operations, value chains, and the reduction of greenhouse gas emissions

Registration is free, and the last date for entries has been extended to **31 May 2024**. The shortlisted finalists will be announced on **16 September 2024** and the Awards

ceremony will be held in November.

Sarah Connolly, Innovation Lead, Innovate UK says, "being the headline sponsor of the IOM3 Sustainable Future Awards allowed Innovate UK to raise the profile of its Transforming Foundation Industries Challenge and celebrate its core values of sustainable innovation, inclusive innovation, and through-supply-chain transformations."

The 2023 winner, Edward Kosior of Nextek Ltd expresses the significance of the IOM3 Sustainable Future Awards, "the IOM3 award is important to us since it comes from a professional society with an expert judging panel... we are honored to be selected as the winner."

The Sustainable Future Awards offer organisations the chance to reflect on their initiatives and achievements in sustainability and emerge as changemakers in their industry. IOM3 also offer sponsorship opportunities for organisations that want to demonstrate their commitment to sustainability and thought leadership by association with the awards.

## ABOUT IOM3

[IOM3](#) is a professional engineering, environmental and scientific institution, a registered charity and governed by a Royal Charter. IOM3 supports professionals in materials, minerals, mining and associated technical disciplines to be champions of the transition to a low-carbon, resilient & resource efficient society. It seeks to be the best professional membership body it can be by providing modern, flexible services; quality technical content; and value for money.

To find out more register for the Awards, [click here](#).

# ACA take industry challenges to the government

In a series of letters to the government, the ACA are seeking advocacy for more training and recognition in surface preparation



The ACA Corrosion & Prevention conference in Cairns, Australia, will this year take place from 10th to 14th of November and focus on the theme Navigating Corrosion Challenges in Marine and Coastal Environments



The Australasian Corrosion Association has petitioned Training and Infrastructure Ministers across Australia asking for recognition of industrial painters as an official trade with increased access to TAFE training in Surface Preparation and Coating Application, to help the industry protect its critical infrastructure.

Corrosion is estimated to cost \$100 billion for Australia, and the appropriate preparation of the surface and application of coatings to steel and concrete could minimise losses. Initiated by the Chair of ACA's Applicators Technical Group, Tim Billing, the letter was sent to Australian government representatives and was endorsed by 202 people within the industry.

Currently, jobs like automotive and decorative painting are considered an official trade, but the painting of significant national infrastructure assets involving hazardous materials is not. The ACA is requesting recognition for industrial painters as an official trade and an urgent review of the availability of TAFE Certificate III training throughout Australia and New Zealand.

It is urgent that this training becomes available to more people, such as school leavers and adult students looking for a new vocation. The ACA New Zealand branch is also fine-tuning this message for the New Zealand market. [Click here](#) to read the letter.

## CORROSION & PREVENTION 2024

The ACA Corrosion & Prevention conference will this year

carry the theme *Navigating Corrosion Challenges in Marine and Coastal Environments* in Cairns, Queensland, Australia, from 10th to 14th of November. Cairns is currently receiving significant support to develop its local roads, community infrastructure and marine precinct, which makes this year's theme relevant. Abstract submissions for technical papers and case studies have closed, but if you'd like to showcase your brand and be part of the biggest corrosion event in the Southern Hemisphere, then [click here](#) to download the Sponsor & Exhibitor Prospectus.

## CORROSION & MATERIALS JOURNAL

The ACA announced the return of the Corrosion & Materials journal for this April. Published quarterly, the magazine includes regular features, breaking news, industry news, profiles, research developments and more. [A prospectus has been released](#), and Members, partners and asset owners can submit their content and advertisement proposals.

## CORROSION VIRTUAL COURSES

The ACA Training department has a range of virtual courses that include AMPP Corrosion Under Insulation, Microbiologically Influenced Corrosion (MIC) E-Learning, ACA Coatings Selection & Specification and AMPP Cathodic Protection 3 (Technologist) and 4 (Specialist). [Click here](#) to see the full list of virtual training courses.

[Click here](#) to learn more about ACA membership.

# Associazione Italiana di Metallurgia confirm courses

## The Italian Association of Metallurgy hosts eight days of modules covering all aspects of corrosion science and engineering



Over eight days, the Italian Association of Metallurgy's comprehensive series of modules covered different aspects of corrosion science and engineering

The Italian Association of Metallurgy (AIM) held the modular basic course on corrosion of metallic materials between 24 January and 15 March, which drew a considerable number of participants from industry and academia.

Over eight days and four modules, the course covered different aspects of corrosion science and engineering, from mechanism of corrosion, investigation and monitoring (Module I), corrosion in atmosphere and concrete (Module II), corrosion in soils and water (Module III), to typical problems of corrosion in industry (Module IV).

Each module included theoretical lectures, in which the mechanisms and morphology of corrosion phenomena, and case studies encountered in both civil and industrial fields were covered. A balance between theoretical and practical aspects was reached, with lecturers from university, industrial companies, and laboratories.

On the first day of Module I, the course dealt with the general theory of corrosion: mechanism of wet corrosion process, kinetic and thermodynamic backgrounds, electrochemical DC techniques for studying corrosion resistance. The second day focused on the different forms of corrosion, while monitoring and inspection techniques, typical standard tests, and failure analysis completed Module I.

In the lectures of Module II, corrosion in the atmosphere and concrete were considered. For atmospheric corrosion, the in-depth topics concerned: the estimation of the corrosion rate, the corrosion behavior of different types of metals used in construction, i.e. carbon steels, weathering (Cor-Ten) steels, stainless steels, aluminium and protective

coatings. In the section on reinforced concrete, design for durability, prevention/protection of corrosion, inspection, monitoring and repair were all covered.

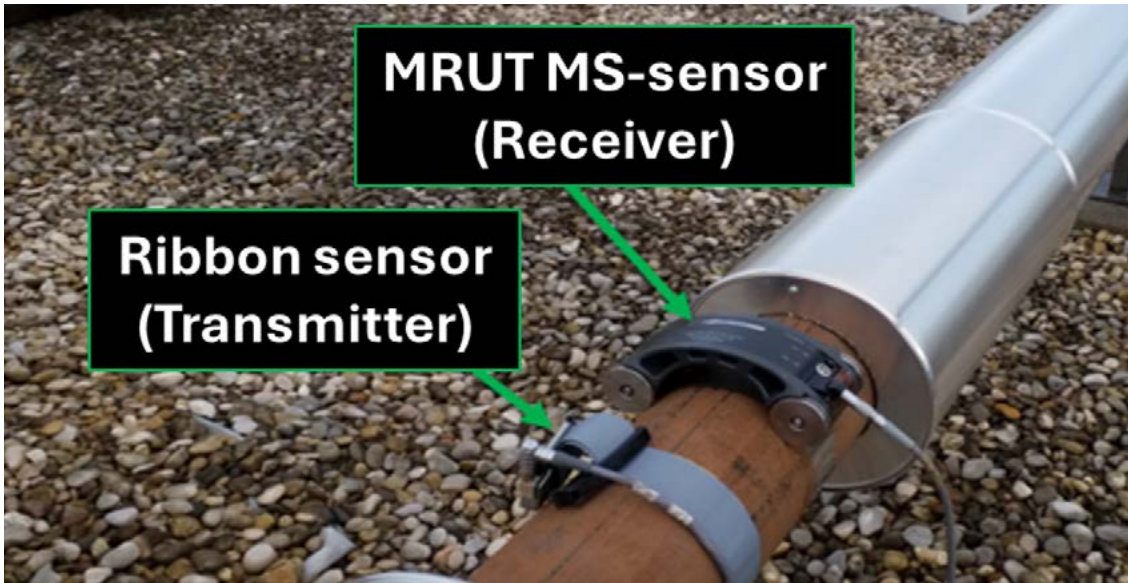
The first day of Module III was devoted to corrosion phenomena affecting buried metallic structures immersed in seawater or in contact with industrial waters. The key role of oxygen, temperature, hardness and scaling power of water were highlighted and the behaviour of most used metallic materials were introduced. In the case of seawater, different corrosion zones were assessed. Different corrosion phenomena in soil were revised, as general corrosion, differential aeration, stray current. Microbial corrosion in soil and waters completed on the first day, before the main methods to stop or reduce corrosion were addressed in theory and practice. Cathodic protection in soil and seawater were described, along with practical applications.

Module IV was focused on the industrial field, starting with a session dedicated to the design criteria applicable to process facilities and the specific requirements for stainless steels. A significant portion of this session was dedicated to mathematical models, both existing and in development, for the prediction of corrosive phenomena. During the second day, the focus shifted to topics such as corrosion testing methodologies in sour environments and the impact of welding processes on corrosion resistance. The course concluded with an afternoon dedicated to material compatibility (metallic and polymeric) with gaseous hydrogen.

To find out more, visit the [AIM website](#)

# Non-destructive techniques as alternative towards Corrosion Under Insulation prevention

**CUIDETEC project aims to innovate in the field the CUI monitorization and quantification**



The insulation of metallic materials plays a key role in terms of protecting them from detrimental environmental effects in structures such as tanks or pipelines. Nevertheless, this insulation does not allow to easily examine the status of the surface underneath and together with the inner conditions, the system is prone to untimely damages. The Corrosion Under Insulation (CUI) has been considered as one of the main problems in setups where metallic components require a proper insulation. It is also one of the most dangerous types of corrosion since it is not visible, as well as hard to detect. Therefore, it compromises the lifetime, operation, and safety of equipment in numerous applications. Several accidents and failures have been reported as a consequence of CUI, becoming a critical issue when the structures store toxic or flammable compounds. Most of these accidents have occurred in the oil and gas industry, where there is a high risk of leakage, explosions, and fracture of pipelines.

CUI has been commonly related to aging of the structures, however, the working conditions, such as contact with chemical compounds, and operation temperature may accelerate the generation of this type of corrosion. The damages caused by CUI also have implications in financial terms, where this represents between 40 and 60% of piping maintenance expenses. A known case is the accident occurred in 2006 where a

leakage in a petrochemical plant led to an explosion that caused damages of [approximately USD 50 million](#). Therefore, due to the necessity of preventing serious damages and decreasing economical loss, monitoring corrosion is crucial, and it can be done by periodical preventive maintenance and visual inspections.

The so-called Non-Destructive Techniques (NDT) have been used as an alternative to monitor and detect the corrosion in several fields of industry including oil and gas. Their capability to not modifying the properties of the equipment to analyse makes them unique in comparison to other techniques.

The main goal of the CUIDETEC project (Corrosion Under Insulation DETECTION) consists in the development of an automated monitoring system which detects, predicts, and quantifies the CUI over insulated steel pipes, combining two NDT techniques. First, an electromagnetic acoustic transducer, Long Range Ultrasonic Testing (LRUT), which requires the removal of 50cm of insulation to couple it to the steel pipeline, to be able to localise defects (axial or circumferential) in a 100m range. Second, a pulsed current transducer (PEC, Pulse Eddy Current), which can measure through the insulation and estimate the size of the defects due to the CUI, generating a map of the wall thickness over the areas previously detected by the LRUT transducer. The critical corroded areas identified by the PEC inspection will

be monitored through permanently installed wireless magnetic sensors. The inspection data will be uploaded on the digital twin platform to perform fitness for service assessment.

To study the sensitivity of the LRUT and PEC transducers, pipelines with different insulation thickness and metallic cases (stainless steel, galvanized steel, aluminum) were fabricated to build a demonstrator installed in CIDETEC (Spain). Mechanical defects of different lengths and depths were made over the steel pipes which allowed to calibrate the transducers.

### AGGRESSIVE ENVIRONMENT

The validation of this development is taking place over the built demonstrator, which is exposed to an aggressive environment. Prior to the insulation, electrochemical defects were generated with acid to simulate the CUI, which is accelerated by thermal cycles due to the condensation of water recirculation, while the transducers register the evolution of the CUI over the defects. Changes in the signals indicate the presence of defects.

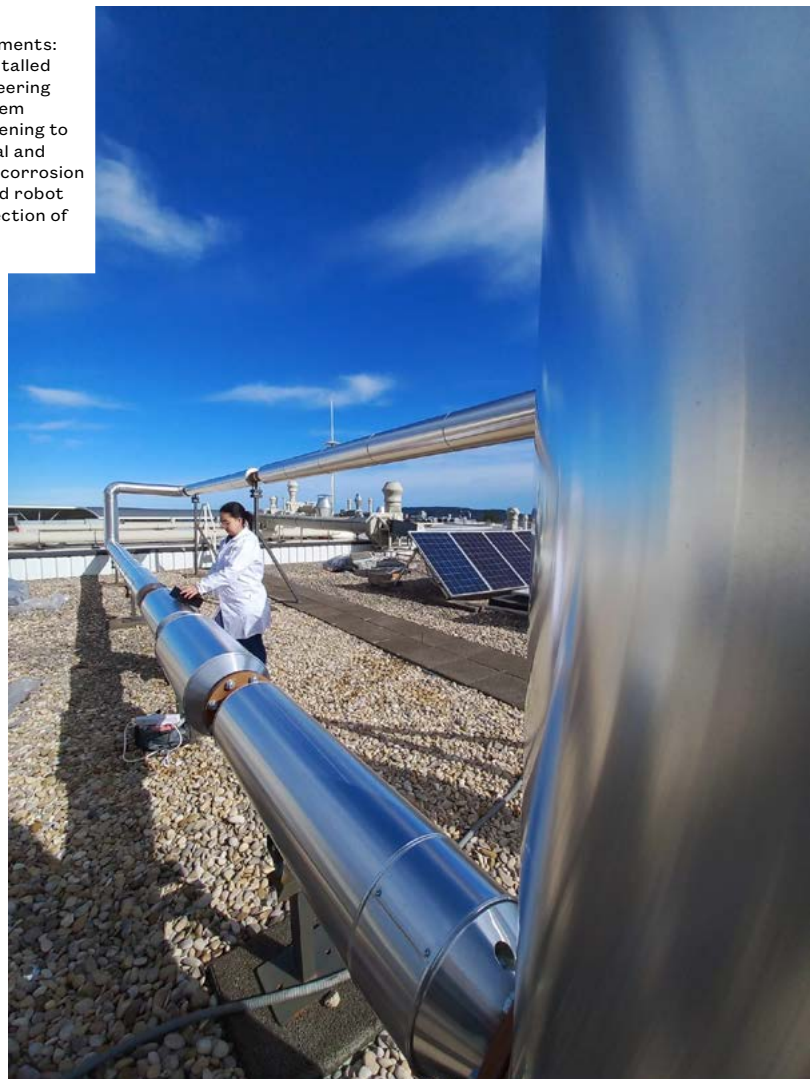
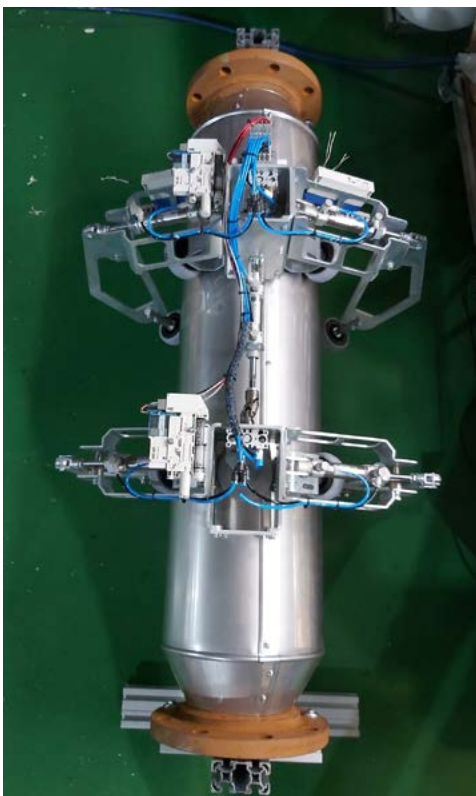
An automated device able to adapt to the inspections and

move the PEC transducer across the pipeline has also been developed. The automation system is based on a robot, which moves vertically and horizontally with a caterpillar-type movement assisted by vacuum system.

The integration of Machine Learning (ML) with conventional NDT techniques promises further advancement in the detection, prediction, and quantification of CUI in insulated steel pipes. For this purpose, synthetic data encompassing several scenarios was generated through the finite element models for NDT. The obtained database serves as a foundation for subsequent training of the ML models. The incorporation of ML in monitoring system reduces the required time and resources for analysis while improving the efficiency of the monitoring process.

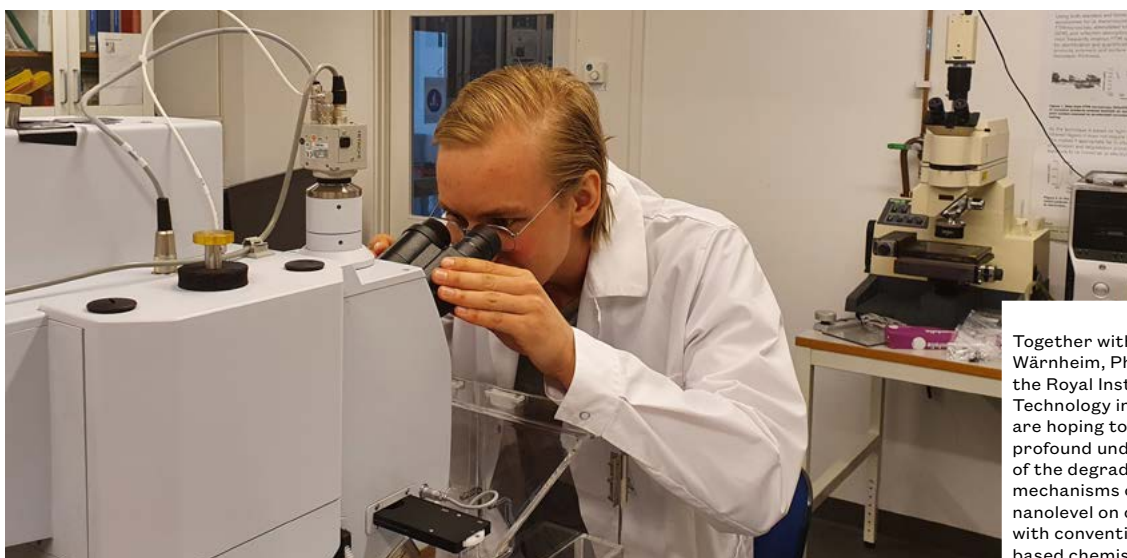
The CUIDETEC project is funded in the framework of the Eurostars-Eureka research and innovation program. The project is led by Innerspec Technologies (UK) in collaboration with 4 partners: Helmholtz-Zentrum Hereon and Nuromedia GmbH (Germany), Design Business and Verification Services and Robolan (Spain) who count with the collaboration of CIDETEC (Spain).

The CUIDETEC project elements: Pipelines demonstrator installed at CIDETEC Surface Engineering facilities (right), LRUT system (VOLTA) for the initial screening to detect and identify the axial and circumferential location of corrosion defects (previous page), and robot prototype mounted on a section of the demonstrator (below)



# RISE doctoral project studies degradation of coil coatings

## Characterisation of coating degradation on the micro and nanoscale for sustainable coil coatings



Together with Alexander Wörnheim, PhD student, the Royal Institute of Technology in Stockholm are hoping to obtain a more profound understanding of the degradation mechanisms on micro- and nanoscale on coil coatings with conventional fossil-based chemistry

In a doctoral project at [RISE](#) and the Royal Institute of Technology in Stockholm the degradation processes of coil coatings during weathering is studied using Infrared spectrochemical imaging, nanoscale Infrared microscopy (AFM-IR and sSNOM) and AFM-based nanoscale mechanical measurements. The goal is to obtain a more profound understanding of the degradation mechanisms on micro- and nanoscale on coil coatings with conventional fossil-based chemistry and for coatings with biobased components. A better understanding of the degradation mechanisms of coil coatings is crucial for the development of more sustainable coil coating systems.

Paint coatings on metal surfaces have, among other properties, important corrosion protection functions. Coil coatings are produced in a continuous and well-optimised process, which results in efficient production of large metal sheets with coatings having a high surface uniformity in terms of aesthetic appearance, mechanical, and chemical properties. The organic coating systems are often achieved using fossil-based raw materials and to replace these with more sustainable system, fossil-based chemicals should be replaced by biobased alternatives. Furthermore, saving in energy and reduction of carbon dioxide footprint can be made by introducing radiation cured systems instead of thermally cured paint systems

The coil coatings contain crosslinked polymers designed to withstand weathering degradation in harsh outdoor environments during exposure to solar radiation and moisture. Usually, quite crude methods are used to quantify

degradation of the coating such as gloss and color changes, but the chemical changes can be more interesting to study. To fully understand the degradation process, the chemical changes of the coating should be studied with high spatial resolution both on the surface and in depth. However, a typical strip-coated paint coating that material producers uses on its sheet metal materials is often only 25-30 mm thin and requires a high resolution and smart methods to evaluate degradation mechanisms.

One challenge for the industry is that the pace of development requires faster testing methods. When coil coatings are tested, they are usually exposed in natural environments, but these tests are often very time-consuming, why various accelerated test methods are used that simulate nature's degradation process, for example climate chambers with ultraviolet light, moist air and high temperature. However, there is a debate as to whether these accelerated processes reflect natural degradation. With thorough characterisation of the coatings after exposure the understanding of the degradation mechanisms can be increased and improvements of the accelerated testing methods can be suggested.

Contact: Dan Persson, pictured ([dan.persson@ri.se](mailto:dan.persson@ri.se))



# Addressing CO<sub>2</sub> corrosion challenges in the Middle East

## Exploring CO<sub>2</sub> corrosion challenges in the main amine column at a Middle East refinery and how the results impact future projects



The refinery has been associated with IGS since 2017 with the use of IGS's high emissivity ceramic coating to improve the efficiency of its continuous catalytic reforming (CCR) furnaces. In 2019, IGS was chosen to address severe corrosion in the refinery's main column by applying its proprietary High Velocity Thermal Spray (HVTS) solution. The latest project in 2023 helped verify the condition of the prior application and included an expanded scope to ensure main amine column's reliability.

### PROBLEM

Metal wastage in the main amine column was caused by CO<sub>2</sub> corrosion. If corrosion was not addressed effectively, it could have caused a serious breach of the column's integrity, leading to an emergency shutdown to perform major repair activities to restore the integrity, with production losses amounting to \$2.5M per day. Previously, the refinery had used organic coatings and conventional thermal metal spray from a local contractor, and both technologies failed in this aggressive operating environment. The plant's integrity team realised that a more robust and permanent solution was needed. With the planned turnaround every four years, IGS HVTS was chosen to freeze any further metal degradation, and substantially extending the life of the vessel.

### SOLUTION

The initial application of IGS HVTS in 2019 onto trays 30-33 demonstrated positive results during a 2021 inspection.

This led to an extension of the scope from tray area 16-23 in 2023, covering an area of more than 240m<sup>2</sup> (2,584ft<sup>2</sup>).

### EQUIPMENT PROTECTED

IGS also addressed areas of concern within the heavy gasoline stripper, amine regenerator, amine regenerator reboiler, and a heat exchanger in the 2019 project. The 2023 scope included a heavy gasoline stripper column.

### BENEFITS AND IMPACT

The application of IGS HVTS secured the main column from further corrosion attack in the protected areas. With a turnaround every four years, the refinery now benefits from peace of mind and anticipates extending IGS's scope to other refinery units at the next turnaround. The economic impact of avoiding emergency shutdowns, with potential losses of approximately \$2.5 million per day, only serves to further underscore the benefit of choosing a technology that protects the columns' substrate from metal degradation.

### CONCLUSIONS

The application of IGS HVTS in the main column provided the refinery with a positive solution to CO<sub>2</sub> corrosion and de-risked their operations. This case study highlights the technical success of HVTS and emphasises the importance of proactive corrosion management in preventing significant economic losses. IGS welcomes future collaborations and continues to discover innovative solutions for mission-critical equipment challenges. [Click here](#) to visit the IGS website.

# Stavanger lays the groundwork for EUROCORR 2025

It might be a year away, but preparations for EUROCORR 2025 are well underway in the Norwegian city that's celebrating a momentous birthday



Wikimedia Commons / Alexey Topolyanskiy

On the year of its 900th anniversary, corrosionists from across the world will descend on Stavanger (pictured) for EUROCORR 2025, which will focus on sustainable solutions for fighting corrosion in society

The Norwegian Corrosion Society (NKF) invites you to Stavanger in Norway from 7 to 11 September for EUROCORR 2025.

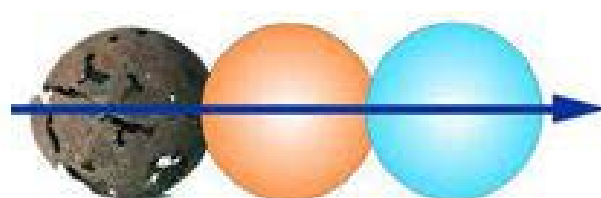
Located on the southwest corner of Norway with easy access from Europe and the world, it has been announced that the conference dinner will be held in the beautiful harbour of Stavanger, while the conference will be held in Stavanger Forum, one of the largest and modern conference and exhibition areas in Norway.

It is set to be a momentous year for the region, as in 2025 the city of Stavanger and its cathedral will both celebrate their 900th anniversary. The magnificent cathedral is currently under renovation and is well worth a visit. Located on the southwest corner of Norway, the city has a rich and interesting history and is the city, that in many ways, forged Norway.

The title for the conference is *Joining forces for smart and sustainable solutions for fighting corrosion in society*, and in Stavanger corrosionists will be invited to participate in networking between scientists, researchers, engineers and students, and even experience the overwhelming nature that Norway has to offer.

Papers will be presented from all EFC Working Parties, while plenary and key note lectures, as well as poster presentations will all be held. A large exhibition is planned for showing the latest developments in corrosion resistant alloys, methods, and technology for preventing corrosion, as well as lab equipment for corrosion research.

EUROCORR 2025 will provide an attractive arena for students and Young EFC members. The local organising



committee will work closely with Young EFC to create an educational and inspiring student programme, including a seminar and networking opportunities with a range of invited speakers and local industry professionals. The organisers, NKF, are convinced that corrosion and electrochemistry will contribute to solve our challenges of the future.

To ease the performance, an APP will be developed for EUROCORR 2025, giving all updated info necessary for the conference and for the participants.

## IMPORTANT DATES

Abstract submission: **15 January 2025**

Notification of acceptance to authors: **Mid April 2025**

Reduced fee for early registration: **End May 2025**

## CONTACT

Torfinn Havn,

Chair of EUROCORR 2025: torfinn.havn@ztrong.no

Phone: +47 91572450

Website: To be announced after EUROCORR 2024



# Stay up to date with EFC events 2024-2025

Make a date in your corrosion calendar for all the latest EFC events and conferences from around the world



## SWISS CORROSION SCIENCE DAY 2024

Zurich, Switzerland, 24 April 2024

### EFC Event No. 508

Organised by the Swiss EFC Member Society SGO-SST endorsing the Swiss Corrosion Network

**Scope:** Aiming to bring corrosion groups in Switzerland (and from neighbouring countries) together for presentations, knowledge exchange, interaction, and networking, the organisers invite scientists and engineers from academia and industry who are interested and/or confronted with corrosion related issues to join the one day event.

To find out more, visit the [Swiss Corrosion Network website](#)

## 6TH EFC WP4 WEBINAR

Is copper a safe canister material for long-term storage of nuclear waste?

Online, 24 April 2024

**Speaker:** Christofer Leygraf, Professor em, KTH Royal Institute of Technology, Stockholm, Sweden

To find out more and register, [click here](#), and [click here](#) to read about the latest WP 4 activities

## 2024 INTERNATIONAL CONFERENCE ON CORROSION PROTECTION AND APPLICATION (ICCPA2024)

Chongqing, China, 17-20 May 2024

### EFC Event No. 506

Organised by Chongqing Hongzhixin Information Technology Co, Ltd, Affiliate Member of EFC

**Scope:** Corrosion Control in Aerospace; Marine Corrosion; Corrosion in Oil and Gas Production; CO<sub>2</sub>-Corrosion in Industrial-Applications; Atmospheric Corrosion; Physico-chemical Methods of Corrosion Testing; Coatings; Microbial Corrosion; Corrosion of Medical Implants and Devices; Corrosion and Scale Inhibition, and Corrosion in Green & Low Carbon Energy Technologies.

To find out more, visit the [ICCPA2024 website](#)

## EFC WEBINAR: CORROSION PERFORMANCE OF ADDITIVELY MANUFACTURED METALS

Online, 21 May 2024

### EFC Event No. 512

**Scope:** Shared experience of corrosion performance of AM metals (stainless steel, alloys) from academia and industry in different sectors

To find out more, visit the [EFC website](#) or [click here](#)

## XVI. INTERNATIONAL CORROSION SYMPOSIUM, (KORSEM 2024)

Karaman, Turkey, 23-25 May 2024

### EFC Event No. 504

Organised by the Corrosion Association in Turkey, a Member Society of EFC

**Scope:** Invited and free submission papers covering the theoretical and experimental aspects of corrosion and corrosion control methods including material selection and design for corrosion services

To find out more, visit the [conference website](#).

### INTERNATIONAL WORKSHOP ON APPLICATION OF ELECTROCHEMICAL TECHNIQUES TO ORGANIC COATINGS (AETOC 2024)

Egmond aan Zee, The Netherlands, 28-31 May 2024

#### EFC Event No. 513

Organised by Delft University of Technology - under the auspices of EFC Working Party 14

**Scope:** The AETOC workshop deals with all the topics related to recent developments in the application of electrochemical techniques to the study and monitoring of organic coatings, as well as novel hybrid (i/o) sol-gel and composite coatings with self-healing and protective properties.

To find out more, visit the [AETOC 2024 website](#)

### 3RD CONFERENCE & EXPO - SHARING KNOWLEDGE, THE WAY TO GO!

Genova, Italy, 9-11 June 2024

#### EFC Event No. 500

Organised by the AMPP Italy Chapter (ex Nace Italia Milano Section)

**Scope:** The Conference is aimed to collect specialists from Europe and worldwide to discuss topics concerned with any fundamental, engineering and applied aspects in the field of corrosion prevention, while the Expo will present materials, equipment and services addressing corrosion prevention systems.

To find out more, visit the [AMPP Italy Chapter website](#).

### ACHEMA 2024 - CONGRESS

Frankfurt/Main, Germany, 10-14 June 2024

#### EFC Event No. 498

**Scope:** ACHEMA addresses current issues and developments that move our community. The ACHEMA congress focuses on application-oriented research and the development, from proof-of-concept to the threshold of market entry. Current trends within process technology are highlighted as well. Topics will include, process innovation, pharma innovation, green innovation, lab innovation, digital innovation, and hydrogen innovation.

To find out more, visit the [ACHEMA website](#).

### NATIONAL CONGRESS OF MATERIALS, CNMAT 2024 - SYMPOSIUM CORROSION AND SURFACE PROTECTION METHODS

Malaga, Spain, 25-28 June 2024

#### EFC Event No. 507

Organised by the Spanish EFC Member Society SOCIEMAT

**Scope:** Study of corrosion phenomena from a basic and/or applied point of view. Development of surface protection methods

To find out more, visit the [CNMAT 2024 website](#)

### EFC SUMMER SCHOOL ON CORROSION IN GREEN ENERGY TECHNOLOGIES

Paris, France, 28-30 August 2024

This school is a great opportunity for graduate students and

post-docs from both, renewable energy technology and corrosion science, for further specialized training interfacing the principles of green energy technologies and corrosion science approaches.

To find out more, visit the [EUROCORR 2024 website](#).

### EUROCORR 2024

Paris, France, 1-5 September 2024

#### EFC Event No. 495

EFC's annual EUROCORR conference in 2024 is hosted by CEFRACOR, the French Corrosion Society.

**Scope:** The programme will include plenary lectures, keynote lectures, oral and poster presentations in all the areas covered by the EFC Working Parties. In addition, the following topics will be included: Corrosion and corrosion protection issues in additive manufacturing; Design and performance of corrosion resistant High Entropy Alloys (Multi-Principal Element Alloys); Durability of materials for hydrogen energy systems; Certification in corrosion and corrosion protection.

To find out more, visit the [EUROCORR 2024 website](#).

### EUROCORR 2025

Stavanger, Norway, 7-11 September 2025

EFC's annual EUROCORR conference will be heading to Scandinavia in 2025.

## SAVE THE DATE

### 9TH INTERNATIONAL WORKSHOP ON LONG-TERM PREDICTION OF CORROSION DAMAGE IN NUCLEAR WASTE SYSTEMS (LTC 2025)

Sendai, Tohoku Region, Japan, 4-6 November 2025

#### EFC Event No. 501

Organised by the Japan Society of Corrosion Engineering (JSCE), Nuclear Waste Management Organization of Japan (NUMO), and EFC WP4 on Nuclear Corrosion

**Scope:** Overview on national disposal programmes with an emphasis on similarities, common challenges and different approaches, regulatory issues, and retrievability. Development of and long-term performance assessment of high-level waste disposal containers. Experimentation with candidate materials, including laboratory tests, full-scale demonstration, in-situ testing, methodology, modelling, monitoring and design.

For the complete listings of future corrosion events around the world, visit the [EFC Calendar of Events](#).

### EUROCORR 2026

Dublin, Ireland, 6-10 September 2026

#### EFC Event No. 510

# EFC Approved Courses 2024

Attributed to courses from Member Societies with high professional standards, the EFC Approved Courses support the education and training of corrosion professionals across Europe



Flickr / Bob Credit

## Milano, Italy, 27 - 31 May 2024

Course: [TECNICO SENIOR addetto alla Protezione Catodica di strutture metalliche interrate e immerse](#)

## Nancy, France, 29 - 30 May 2024

Course: [Biodétérioration des matériaux-approfondissement](#)

## Milano, Italy, 24 - 28 June 2024

Course: [SPECIALISTA addetto alla Protezione Catodica di strutture metalliche interrate e immerse](#)

## Milano, Italy, 16-17 September 2024

Course: [ADDETTO alla Protezione Catodica di strutture metalliche interrate e immerse](#)

## Lyon, France, 24-26 September 2024

Course: [Traitement des eaux industrielles: générateurs de vapeur et circuits de refroidissement \(Niveau 1\)](#)

## Milano, Italy, 7-11 October 2024

Course: [TECNICO addetto alla Protezione Catodica di strutture metalliche interrate e immerse](#)

## Milano, Italy, 21-25 October 2024

Course: [TECNICO SENIOR addetto alla Protezione Catodica di Strutture metalliche interrate e immerse](#)

## Lyon, France, 26-28 November 2024

Course: [Traitement des eaux industrielles: générateurs de vapeur et circuits de refroidissement – Approfondissement \(Niveau 2\)](#)

For full details of these and a complete listing of many other future corrosion events scheduled to be held across Europe and throughout the world, then visit the [EFC Calendar of Events](#).



### LEGAL NOTICE

European Federation of Corrosion (EFC)

President: Prof. Tomáš Prošek

AISBL, Avenue des Arts 56/4C, 1000 Bruxelles, Belgium  
Association No. : 0425.591.656 VAT No.: BE 0425.591.656

E-Mail: [offices@efcweb.org](mailto:offices@efcweb.org). Website: [efcweb.org](http://efcweb.org)

### CONTACT

Editor: Dan Mobbs → [editor@efcweb.org](mailto:editor@efcweb.org)



The statements and opinions expressed in the Newsletter are those of the contributors, for which the EFC assumes no responsibility. Read our data privacy policy [here](#).